Environmental Resources Management

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1 March 2019
Reference: 0042525

VIA ELECTRONIC MAIL

Mr. Will Geiger
Remedial Project Manager
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

RE: North Penn Area 2 Superfund Site/Former AMETEK Facility
Progress Report for July-December 2018

Dear Mr. Geiger:

On behalf of AMETEK, Inc. (AMETEK) and Penn Color, Inc. (Settling Defendants), Environmental Resources Management, Inc. (ERM) hereby submits this progress report pursuant to Section X of the Consent Decree (Consent Decree) executed between the Settling Defendants and the United States of America and entered on 10 February 2011.

SUMMARY OF ACTIVITIES PERFORMED IN REFERENCED PERIOD

1. Recovery wells PW-3 and MW-2 were operated to recover volatile organic compound (VOC)-impacted groundwater. See the Summary of Data section below.

2. The Settling Defendants continued Wetland and Surface Soil operation and maintenance (O&M) activities, including the following:
    a. ERM inspected the wetland and surface soil area restorations (plantings and seeded areas).

3. The Settling Defendants continued Groundwater O&M activities, including the following:
    a. ERM replaced the PW-3 pump wet end and riser pipe on 11 November 2018.
    b. For the semiannual groundwater sampling event, ERM installed passive diffusion bags (PDBs) in applicable Group 1 monitoring wells on 9 October 2018. PDBs were retrieved and samples were collected from Group 1 monitoring wells on 30 November 2018. The monitoring well locations are shown on Figure B.

c. ERM collected surface water elevation measurements and samples from four locations on 30 November 2018. The stream monitoring point locations are shown on Figure B.

d. ERM conducted a Site-wide groundwater elevation survey (38 wells; MW-2 and PCGW-3 were unable to be monitored) on 30 November 2018.

4. The Settling Defendants submitted to USEPA the Sampling and Analysis Plan Addendum for Perfluoroalkyl Substances on 23 February 2018.

    a. The USEPA provided comments on the Sampling and Analysis Plan Addendum on 7 May 2018.

    b. ERM completed edits to the Sampling and Analysis Plan and submitted to USEPA on 5 September 2018.

    c. The USEPA provided additional comments on the Sampling and Analysis Plan on 22 October 2018. A call between the USEPA, ERM and its laboratory subcontractor (Eurofins Laboratories) was conducted on 29 October 2018 to determine if the modifications to the analysis method were appropriate. It was agreed that the USEPA would review Eurofin's Quality Assurance Project Plan (QAPP) related to the modifications to the analysis method and provide comments.

    d. On 21 December 2018 the USEPA approved Eurofin's QAPP and the Sampling and Analysis Plan Addendum for Perfluoroalkyl Substances.

5. The Settling Defendants began the remedial design of the Sub-Slab Depressurization System to be installed in Building 1 and the HVAC Building.

    a. A geophysical survey was conducted between 27-29 September 2018 in an effort to locate subsurface utilities and structures.

SUMMARY OF DATA RECEIVED OR GENERATED IN REFERENCED PERIOD

1. Table 1 presents the groundwater sample analytical data for the Group 1 sampling event conducted on 30 November 2018. Results of this sampling event remain consistent with recent historical results. Group 1 wells, other than the recovery wells, continue to be below the remediation goals, which indicates the groundwater capture system continues to be effective.

2. Table 2 presents the surface water sample analytical data for the surface water events conducted on 30 November 2018. All the surface water sample results were below the remediation goals (Surface Water Criteria), which indicates the wetlands remediation work has been effective.

3. Tables 3 through 5 summarize the recent performance data for recovery wells PW-3 and MW-2. The most recent estimate of the amount of VOCs remaining in the bedrock groundwater is depicted graphically on Figure A.

4. Table 6 presents the groundwater level and surface water level monitoring data from the November 2018 event.

5. Pumping rate and static water level monitoring data were evaluated for maintenance of hydraulic control over the contaminant plume. Figures 1 through 3 are potentiometric surface maps for the shallow, intermediate, and deep wells, respectively, and are based on the November 2018 water level monitoring event. The figures indicate groundwater drawdown and capture is apparent.

SUMMARY OF DELIVERABLES SUBMITTED IN REFERENCED PERIOD

1. The progress report for the first half 2018 was submitted on 12 August 2018.

2. ERM submitted to USEPA the Sampling and Analysis Plan Addendum for Perfluoroalkyl Substances on 23 February 2018. USEPA provided comments on 7 May 2018. ERM completed edits to the Sampling and Analysis Plan and submitted to USEPA on 5 September 2018. Comments were provided by USEPA on 22 October 2018. Approval of the document was provided by USEPA on 21 December 2018.

ANTICIPATED ACTIVITIES FOR THE NEXT PERIOD

1. The Settling Defendants will continue Wetland and Surface Soil RA activities, including the following:
    - The wetland and surface soil area restorations (plantings and seeded areas) may be monitored.

2. The Settling Defendants will continue Groundwater RA activities, including the following:

- PW-3 and MW-2 pump maintenance and/or replacement will be performed as necessary.
- PW-3 and MW-2 operations and pumping rates will be monitored.

3. The following monitoring and sampling events will be performed in first half of 2019:
    - Annual groundwater sampling of Groups 1 and 2 wells (23 wells), site-wide wells water level gauging (40 wells), and stream gauging and sampling (4 locations) – anticipated for May 2018.
4. Groundwater sampling for PFAS compounds will be conducted in early 2019.
5. The Settling Defendants will finalize the plan/design for sub-slab depressurization system in the vicinity of select sub-slab samples in Building 1 and the HVAC Building.

SCHEDULE PERCENT COMPLETION AND DELAYS

1. Not applicable at this time.

MODIFICATIONS TO PLANS OR SCHEDULES

1. There are no modifications to the work plans or other schedules at this time.

COMMUNITY RELATIONS

1. Not applicable at this time.

Please review this information and, if you have any questions, please call me at 484-913-0360 or Rich Dulcey at 609-403-7509.

Sincerely,

Jake Ferry, P.E.
Project Manager

Enclosures: Tables 1 through 6
Figures A, B, and 1 through 3

cc: D. Armstrong, PADEP
T. Deeney, AMETEK
M. Berg, Madelaine R. Berg, Esq. LLC
W. Ponticello, Penn E&R
R. Dulcey, ERM

Table 1
Groundwater Sampling Results - November 2018
North Penn Area 2 Superfund Site
Hatfield Township, Pennsylvania

CLIENT ID:		PW-3			MW-2			MW-9I			MW-14I		
LAB ID:		9919823			9919822			9919817			9919818		
COLLECTION DATE:		11/30/2018			11/30/2018			11/30/2018			11/30/2018		
SAMPLE MATRIX:		Groundwater			Groundwater			Groundwater			Groundwater		
SAMPLE UNITS:		µg/L			µg/L			µg/L			µg/L		
Analyte	Cleanup Standard* (µg/L)	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Volatile Organic Compounds													
Carbon Tetrachloride	5	ND		0.2	ND		0.4	ND		0.2	ND		0.2
1,2-Dichloroethane	5	ND		2	ND		4	ND		2	ND		2
1,1- Dichloroethene	7	**170**		0.2	**730**		4	ND		0.2	ND		0.2
cis-1,2-Dichloroethene	70	**9**		0.2	**12**		0.4	ND		0.2	ND		0.2
Tetrachloroethene	5	**54**		0.2	**25**		0.4	ND		0.2	ND		0.2
Trichloroethene	5	**480**		2	**1,100**		4	ND		0.2	ND		0.2
Vinyl Chloride	2	ND		0.4	ND		0.8	ND		0.4	ND		0.4

CLIENT ID:		MW-13D			MW-13I			MW-13S		
LAB ID:		9919821			9919820			9919819		
COLLECTION DATE:		11/30/2018			11/30/2018			11/30/2018		
SAMPLE MATRIX:		Groundwater			Groundwater			Groundwater		
SAMPLE UNITS:		µg/L			µg/L			µg/L		
Analyte	Cleanup Standard* (µg/L)	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Volatile Organic Compounds										
Carbon Tetrachloride	5	ND		0.2	ND		0.2	ND		0.2
1,2-Dichloroethane	5	ND		2	ND		2	ND		2
1,1- Dichloroethene	7	ND		0.2	ND		0.2	ND		0.2
cis-1,2-Dichloroethene	70	ND		0.2	ND		0.2	ND		0.2
Tetrachloroethene	5	ND		0.2	ND		0.2	ND		0.2
Trichloroethene	5	ND		0.2	ND		0.2	ND		0.2
Vinyl Chloride	2	ND		0.4	ND		0.4	ND		0.4

Notes:
*Cleanup Standard as listed in Record of Decision
MDL: Medium Detection Limit
Q: Lab Qualifier
All units in microgram per liter (µg/L)
J: Indicates an estimated value between the MDL and the Practical Quantitation Limit (PQL) for the analyte.
Bolded values indicate results greater than MDL.
Highlighted values indicate results exceed the cleanup standard.
ND: Not Detected

Table 2
Surface Water Sampling Results - November 2018
North Penn Area 2 Superfund Site
Hatfield Township, PA

	CLIENT ID:	SMP-0			SMP-1			SMP-2			SMP-3		
	LAB ID:	9919861, 9919862			9919859, 9919860			9919857, 9919858			9919855, 9919856		
	COLLECTION DATE:	11/30/2018			11/30/2018			11/30/2018			11/30/2018		
	SAMPLE MATRIX:	Surface Water			Surface Water			Surface Water			Surface Water		
	SAMPLE UNITS:	µg/L			µg/L			µg/L			µg/L		
Analyte	Surface Water Criteria* (µg/L)	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Volatile Organic Compounds													
Carbon Tetrachloride	0.23	ND		0.06	ND		0.06	ND		0.06	ND		0.06
1,2-Dichloroethane	0.38	ND		0.05	ND		0.05	ND		0.05	ND		0.05
1,1-Dichloroethene	33	**0.06**	**J**	0.05	ND		0.05	ND		0.05	ND		0.05
Tetrachloroethene	0.69	ND		0.05	ND		0.05	ND		0.05	ND		0.05
Trichloroethene	2.5	ND		0.05	ND		0.05	**0.07**	**J**	0.05	**0.08**	**J**	0.05
Vinyl Chloride	0.025	ND		0.020	ND		0.020	ND		0.020	ND		0.020
Dissolved Metals													
Chromium	NA**	ND		0.0053	ND		0.0053	ND		0.0053	ND		0.0053
Trivalent Chromium waters	101	ND		0.010	ND		0.010	ND		0.010	ND		0.010
Hexavalent Chromium	**	ND		0.010	ND		0.010	ND		0.010	ND		0.010
Zinc, Total	163	ND		0.003	ND		0.003	ND	K4	0.003	ND	K4	0.003
Cadmium	0.32	ND		0.00015	ND		0.00015	ND		0.00015	ND		0.00015
Lead	3.79	ND		0.0011	ND		0.0011	ND		0.0011	ND		0.0011
Dissolved Metals													
Antimony	5.6	ND		0.41	ND		0.41	ND		0.41	ND		0.41
Arsenic	10	ND		0.68	ND		0.68	ND		0.68	ND		0.68
Thallium	0.24	ND		0.11	ND		0.11	ND		0.11	ND		0.11

Notes:
* Criteria are the lower value of the Fish and Aquatic Life Continuous Criteria and the Human Health Criteria. See Table 1 in Remedial Action Sampling and Analysis Plan.
** Chromium III = Total Chromium - Hexavalent Chromium. Calculation performed by the laboratory.
Only Chromium III is needed for the site requirements
MDL: Method Detection Limit
Q: Lab Qualifier
J: Indicates an estimated value between the MDL and the Practical Quantitation Limit (PQL) for the analyte.
K4: Continuing Calibration Verification is above the QC Limit and the sample result is Non Detect.
Bold values indicate results greater than MDL.
Highlighted values indicate results exceed the cleanup standard.
ND: Not Detected
NS: Not Sampled

Table 3
Performance Data for PW-1 and PW-3 Operation
North Penn Area 2 Superfund Site
Hatfield Township, Pennsylvania
Updated 11 January 2019

Date and Time	Totalizer Reading (gal)	Total Flow (gal)	Average Flow for Period (gpm)	Average Flow for Period (gpd)	Total VOC Conc in Well (ug/l)	Cumulative Pounds VOCs Removed	Efficiency - Pounds removed/ 100K gal	Removal Rate - Pounds/ year @ 20,000 gpd
PW-1 Operation								
01/01/01 12:00								
04/28/02 14:00		9,641,700	13.9	20,000	**809**	65	0.7	49
PW-3 Operation								
12/14/02 15:56	3,470,840	5,945,840	14.8	21,326	4,170	240	3.5	254
12/04/03 11:00	10,897,332	13,372,332	14.0	20,138	**3,351**	472	2.8	204
12/21/04 08:30	18,837,960	21,312,960	14.0	20,171	1,619	627	1.4	99
11/07/05 16:03	25,622,360	28,097,360	15.3	21,978	1,602	727	1.3	98
12/18/06 08:00	3,147,400	36,874,830	30.1	43,276	2,000	846	1.7	122
12/10/07 10:04	10,148,650	43,876,080	12.2	17,556	**1,618**	965	1.4	99
12/11/08 10:27	6,734,020	51,983,032	14.5	20,828	**869**	1,050	0.7	53
11/30/09 07:45	4,145,450	59,125,462	14.1	20,356	981	1,110	0.8	60
12/23/10 15:01	1,820,650	67,867,920	17.4	25,049	659	1,171	0.5	40
12/15/11 09:35	4,307,990	76,695,207	17.4	25,125	**725**	1,221	0.6	44
12/13/12 08:28	2,264,504	84,044,677	14.1	20,321	693	1,261	0.6	42
12/19/13 09:42	9,025,402	90,805,575	9.8	14,128	803	1,306	0.7	49
12/30/14 09:38	16,676,354	98,456,527	10.3	14,818	745	1,355	0.6	45
12/22/15 09:20	23,608,432	105,388,605	13.0	18,650	753	1,396	0.6	46
12/06/16 07:30	30,673,869	112,454,042	13.9	20,014	**730**	1,444	0.6	44
12/07/17 10:30	38,320,799	120,100,972	13.9	19,988	767	1,498	0.6	47
01/04/18 09:39	38,854,318	120,634,491	13.2	19,078	767	1,502	0.6	47
02/07/18 13:05	39,707,075	121,487,248	17.3	24,976	767	1,507	0.6	47
03/01/18 10:07	40,343,319	122,123,492	20.2	29,084	767	1,511	0.6	47
04/06/18 09:13	40,931,024	122,711,197	11.3	16,342	767	1,515	0.6	47
05/04/18 14:00	41,454,629	123,234,802	12.9	18,568	767	1,518	0.6	47
06/07/18 10:42	42,004,376	123,784,549	11.3	16,235	767	1,522	0.6	47
07/08/18 14:20	42,574,904	124,355,077	12.7	18,315	767	1,526	0.6	47
08/08/18 10:37	43,179,075	124,959,248	13.6	19,587	767	1,529	0.6	47
09/05/18 11:20	43,692,855	125,473,028	12.7	18,330	767	1,533	0.6	47
10/09/18 10:00	44,407,757	126,187,930	14.6	21,061	767	1,537	0.6	47
11/08/18 14:35	45,019,038	126,799,211	14.1	20,247	767	1,541	0.6	47
12/11/18 13:36	45,770,469	127,550,642	15.8	22,799	**713**	1,546	0.6	43

Key Dates

3/18/10 - Pump pulled and cleaned; new Totalizer/Flow Meter installed.
3/18/10 cont. - End reading = 6,208,500 gal; new meter start at 0 gal.
5/20/10 - Replaced liquid (non-motor) end of the pump (Goulds 18GS07).
9/9/10 - Penn Color reported the pump stopped working in the morning.
9/15/10 - Installed new pump (Goulds 18GS10422C, 1hp). Replaced pump control box with 15A breaker and enclosure (previous control box not rated for 1hp motor).
10/19/10 - Flow meter problem observed.
10/21/10 - New totalizer/flow meter installed. End reading = 4,858,758; New meter start at 0 gal.
4/8/11 - Due to site transformer problem disrupting electric power supply to pump, pump did not operate for approx. 1 day.
5/17/11 - PW-3 sampled during Remedial Design groundwater monitoring event. Value listed in table on 5/16/11 date.
6/22/11 - New totalizer/flow meter installed. End reading = 6,339,947; New meter start at 0 gal.
6/19/12 - New flow meter and automated system installed (RA implementation). End reading = 8,158,592 gal; New meter start at 0 gal.
8/30/12 - Data indicate pump did not operate 7/18/12 17:35 through 7/23/12 08:50, or 7/26/12 19:20 through 7/27/12 11:05. Alerts programming issues still being investigated.
8/30/12 - Flow meter total reset to 0 gal. End reading prior to reset = 1,234,364 gal.
11/8/12 - The October reading was delayed due to Hurricane Sandy.
10/7/13 - The pump was cleaned to try to increase the flow rate.
12/29/13 - The pump stopped working.
1/8/14 - Removed old pump and riser pipe. Riser pipe restricted due to buildup. Identified the need for 3-phase motor.
1/10/14 - Installed new pump (Goulds 18GS10422C, 1hp, with 3-phase 230V motor CentriPro M10432 100C313) and new 1" 160 psi black poly riser pipe.
12/26/14 - 12/30/14 - Pump shut down due to full bag filter on Penn E&R treatment system.
2/27/15 - The pump had been shut down for a period of time due to full bag filter on Penn E&R treatment system.
3/10/15 - Replaced pump motor (Goulds 18GS10, serial # A1549302) and riser pipe. Pump set at 100' bgs.
3/29/16 - Replaced pump wet end (Goulds 18GS10, 8 stage, 4", 1HP), not the motor, and riser pipe. Pump set at 100' bgs.
3/28/17 - Replaced pump wet end (Goulds 18GS10, 8 stage, 4", 1HP), not the motor, and riser pipe. Pump set at 100' bgs.
1/9/18 - Replaced pump wet end (Goulds 18GS10, 8 stage, 4", 1HP), not the motor, and riser pipe. Pump set at 100' bgs.
11/8/18 - Replaced pump wet end (Goulds 18GS10, 8 stage, 4", 1HP), not the motor, and riser pipe. Pump set at 100' bgs.

Total VOC Concentration Basis

Values in **bold** are actual sample results.
Values for dates between samples are the average of the two samples.
Values after the most recent sample date are roll-forward values and will be updated once the next sample result is obtained.

Notes: Results from 6/1/05 through 12/15/11 include Freon 113 (typically <10 ug/l) and TCFM (typically <20 ug/l) which were not previously included in total VOCs.
For 2002 - 2017, spreadsheet rows compressed (hidden) to show only last data for the year in order to save space on table, but all data are preserved.

Table 4
Performance Data for MW-2 Operation
North Penn Area 2 Superfund Site
Hatfield Township, Pennsylvania
Updated 11 January 2019

Date and Time	Pump Cycle Count	Total Flow (gal) · 0.07 gal/cycle	Average Flow for Period (gpm)	Average Flow for Period (gpd)	Total VOC Conc in Well (ug/l)	Cumulative Pounds VOCs Removed	Efficiency - Pounds removed/ 100K gal	Removal Rate - Pounds/ year @ 400 gpd
MW-2 Operation								
12/21/04 08:30	1,600,000	112000	0.403	581	19,528	17.5	16.3	24
11/07/05 16:03	3,412,970	238908	0.513	739	15,150	40.2	12.6	18
12/18/06 08:00	6,997,105	489797	0.069	99	14,205	68.8	11.9	17
12/10/07 10:14	6,997,131	489799	0.000	0	14,205	68.8	0.0	
12/11/08 10:24	9,324,448	552645	0.612	882	**10,120**	78.9	8.4	12
11/30/09 07:42	11,333,363	693269	0.241	347	16,266	91.4	13.6	20
11/17/10 09:16	12,952,765	806627	0.007	10	**9,357**	105.0	7.8	11
12/23/10 15:01	13,040,011	812734	0.107	154	9,531	105.5	8.0	12
12/15/11 09:35	14,454,676	911761	0.537	773	**11,822**	114.0	9.9	14
12/13/12 08:28	17,751,367	1142529	0.481	693	10,889	130.2	9.1	13
12/19/13 09:42	21,099,680	1376911	0.425	612	15,413	158.4	12.9	19
12/30/14 09:38	23,758,563	1563033	0.381	549	10,822	180.2	9.0	13
12/22/15 09:20	969,132	1630876	0.175	251	4,392	184.3	3.7	5
12/06/16 07:30	2,928,310	1768018	0.232	334	**2,327**	188.4	1.9	3
12/07/17 10:30	5,265,210	1931601	0.316	455	2,979	193.8	2.5	4
01/04/18 09:39	5,422,803	1942633	0.294	423	2,979	194.5	2.5	4
02/07/18 13:05	5,634,371	1957443	0.289	416	2,979	194.5	2.5	4
03/01/18 10:07	5,866,846	1973716	0.385	555	2,979	195.2	2.5	4
04/06/18 09:13	6,156,347	1993981	0.439	632	2,979	195.4	2.5	4
05/04/18 14:00	6,338,910	2006760	0.358	515	2,979	196.1	2.5	4
06/07/18 10:42	6,613,720	2025997	0.358	516	2,979	196.2	2.5	4
07/08/18 14:20	6,820,425	2040467	0.360	518	2,979	196.9	2.5	4
08/08/18 10:37	7,046,724	2056307	0.340	489	2,979	196.9	2.5	4
09/05/18 11:20	7,277,942	2072493	0.378	544	2,979	197.7	2.5	4
10/09/18 10:00	7,599,683	2095015	0.434	625	2,979	197.9	2.5	4
11/08/18 14:35	7,675,432	2100317	0.301	434	2,979	198.4	2.5	4
12/11/18 13:36	7,963,197	2120461	0.280	403	**1,867**	198.3	1.6	2

Key Dates

1/27/10 - Pump was shut down by Penn Color for previous 36 hours, due to rain flooding event.
3/18/10 - Pump pulled and cleaned; replaced pressure gage.
9/15/10 - Pump pulled and cleaned.
10/15/10 - Pump reading indicated pump no functioning.
10/21/10 - Pump inspected and determined to be unfixable.
11/8/10 - Replacement pump installed (QED AP2B Short).
5/17/11 - MW-2 sampled during Remedial Design groundwater monitoring event. Value listed in table on 5/16/11 date.
6/22/11 - Pump operating but reading not obtained; so used average of adjacent table values.
9/27/11 - Pump operating but reading not obtained; so used average of adjacent table values.
6/19/12 - Pump operating but reading not obtained; so used average of adjacent table values.
11/8/12 - The October reading was delayed due to Hurricane Sandy.
4/7/15 - Replaced cycle counter. It was discovered to have been malfunctioning since sometime in January, though the pump had been operating correctly.

Total VOC Concentration Basis

Values in **bold** are actual sample results.
Values for dates between samples are the average of the two samples.
Values after the most recent sample date are roll-forward values and will be updated once the next sample result is obtained.

Notes: Results from 6/1/05 on include Freon 113 (7 ug/l) and TCFM (19 ug/l) which were not previously included in total VOCs.
For 2002 - 2017 spreadsheet rows compressed (hidden) to show only last data for the year in order to save space on table, but all data are preserved.

Table 5
Performance Data for All Recovery Wells
North Penn Area 2 Superfund Site
Hatfield Township, Pennsylvania
Updated 11 January 2019

Pumps Operated	Date and Time	Cumulative Pounds VOCs Removed	% of VOCs Removed	Estimated Pounds VOCs Remaining	Total Flow	Average Flow for Period (gpd)
PW-1	01/01/01 12:00			2,576		
	04/28/02 14:00	65	2.6%	2,511		20,000
PW-3	04/29/02 14:00			2,511		
	12/14/02 15:56	240	9.6%	2,271		21,326
	12/04/03 11:00	472	18.8%	2,039		20,138
PW-3 & MW-2	08/16/04 12:10	593	23.6%	1,918		22,605
	12/21/04 08:30	644	25.7%	1,867		20,751
	11/07/05 16:03	767	30.5%	1,744		22,717
	12/18/06 08:00	915	36.4%	1,596	37,364,627	43,375
	12/10/07 10:04	1,034	41.2%	1,477	44,365,879	17,556
	12/11/08 10:27	1,129	45.0%	1,382	52,535,677	21,710
	11/30/09 07:45	1,201	47.8%	1,310	59,818,731	20,703
	12/23/10 15:01	1,277	50.9%	1,234	68,680,654	23,429
	12/15/11 09:35	1,335	53.2%	1,176	77,606,968	25,898
	12/13/12 08:28	1,392	55.4%	1,119	85,187,206	21,014
	12/19/13 09:42	1,464	58.3%	1,047	92,182,486	14,739
	12/30/14 09:38	1,535	61.1%	976	100,019,560	15,367
	12/22/15 09:20	1,581	62.9%	930	107,019,481	18,901
	12/06/16 07:30	1,632	65.0%	879	114,222,060	20,348
	12/07/17 10:30	1,692	67.4%	819	122,032,573	20,443
	01/04/18 09:39	1,696	67.6%	815	122,577,124	19,501
	02/07/18 13:05	1,702	67.8%	809	123,444,691	25,392
	03/01/18 10:07	1,706	68.0%	804	124,097,208	29,638
	04/06/18 09:13	1,710	68.1%	801	124,705,178	16,974
	05/04/18 14:00	1,714	68.3%	796	125,241,562	19,083
	06/07/18 10:42	1,718	68.4%	793	125,810,546	16,751
	07/08/18 14:20	1,722	68.6%	788	126,395,544	18,833
	08/08/18 10:37	1,726	68.8%	785	127,015,555	20,076
	09/05/18 11:20	1,730	68.9%	781	127,545,521	18,874
	10/09/18 10:00	1,735	69.1%	776	128,282,945	21,686
	11/08/18 14:35	1,740	69.3%	771	128,899,528	20,681
	12/11/18 13:36	1,744	69.5%	767	129,671,103	23,202
				Average (~last 6 months)		20,631

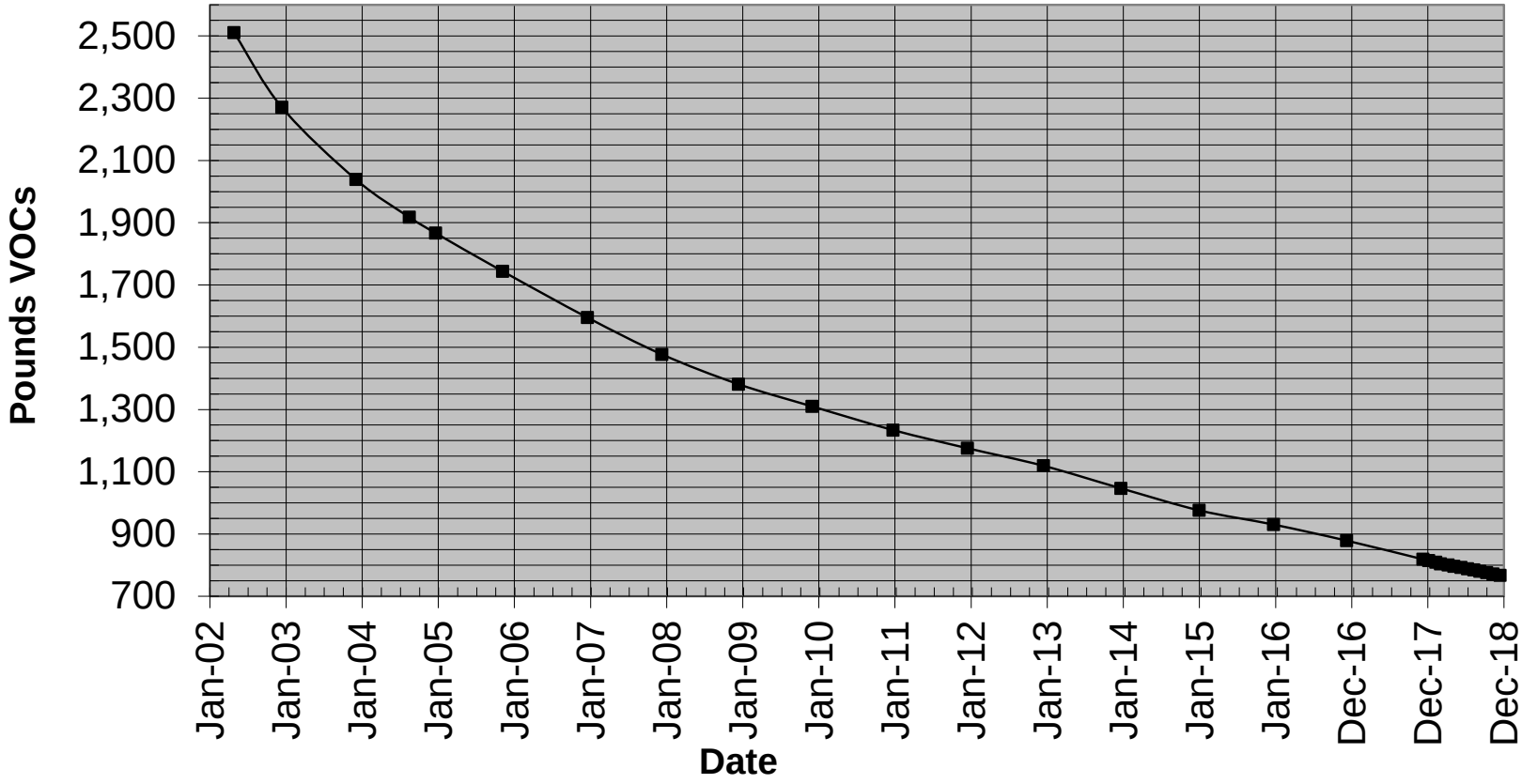
Notes: For 2002 - 2017 spreadsheet rows compressed to show only last data for the year in order to save space on table, but all data are preserved.

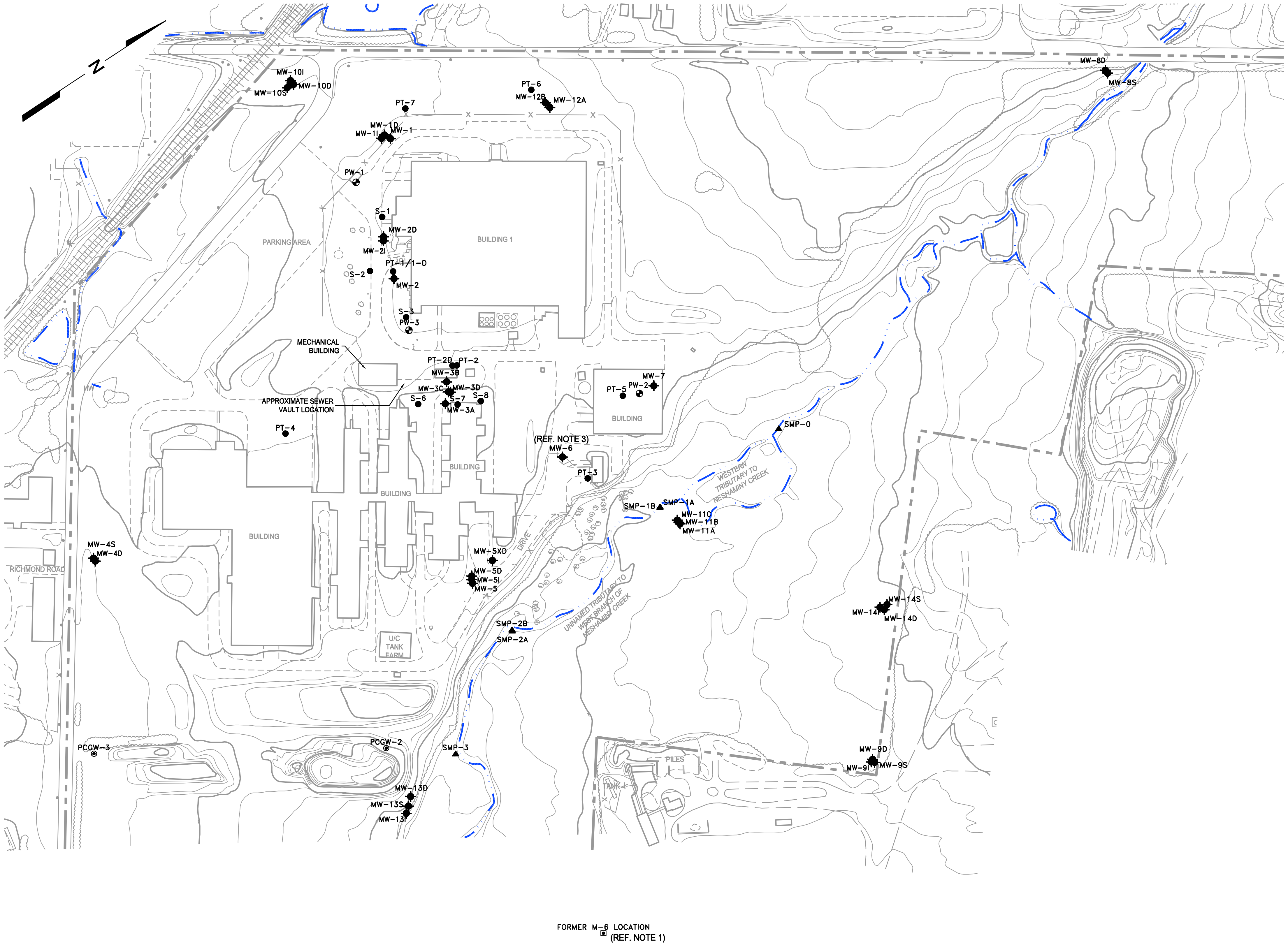
8/30/12 - PW-3 flow meter reading/programming issue.

Table 6
Water Level Data: 30 November 2018
North Penn Area 2 Superfund Site
Hatfield Township, Pennsylvania

Date	Well	Top of Casing Elevation (ft amsl)	Depth to Water (ft below top of inner casing)	Water Level Elevation (ft amsl)	Notes
11/30/2018	MW-1	354.34	14.20	340.14	
11/30/2018	MW-1I	354.3	13.43	340.87	
11/30/2018	MW-1D	354.22	17.74	336.48	
11/30/2018	MW-2	355.33	--	--	
11/30/2018	MW-2I	353.13	20.21	332.92	
11/30/2018	MW-2D	353.38	22.54	330.84	
11/30/2018	MW-3A	348.72	17.14	331.58	
11/30/2018	MW-3B	353.18	21.73	331.45	
11/30/2018	MW-3C	348.59	18.16	330.43	
11/30/2018	MW-3D	348.88	13.75	335.13	
11/30/2018	MW-4S	354.5	11.22	343.28	
11/30/2018	MW-4D	353.51	10.35	343.16	
11/30/2018	MW-5	346.68	10.37	336.31	
11/30/2018	MW-5I	348.84	13.21	335.63	
11/30/2018	MW-5D	349.12	13.79	335.33	
11/30/2018	MW-5XD	348.73	13.07	335.66	
11/30/2018	MW-6	347.23	11.14	336.09	
11/30/2018	MW-7	350.28	10.03	340.25	
11/30/2018	MW-8S	362.72	8.01	354.71	
11/30/2018	MW-8D	363.08	7.79	355.29	
11/30/2018	MW-9S	347.64	5.18	342.46	
11/30/2018	MW-9I	348.63	4.66	343.97	
11/30/2018	MW-9D	347.99	3.57	344.42	
11/30/2018	MW-10S	354.29	13.00	341.29	
11/30/2018	MW-10I	355.13	12.62	342.51	
11/30/2018	MW-10D	354.66	15.09	339.57	
11/30/2018	MW-11A	344.14	3.82	340.32	
11/30/2018	MW-11B	344.2	3.97	340.23	
11/30/2018	MW-11C	343.89	4.30	339.59	
11/30/2018	MW-12A	355.31	10.37	344.94	
11/30/2018	MW-12B	354.91	8.16	346.75	
11/30/2018	MW-13S	341.78	7.04	334.74	
11/30/2018	MW-13I	340.89	6.04	334.85	
11/30/2018	MW-13D	342.2	6.04	336.16	
11/30/2018	MW-14S	351.91	7.59	344.32	
11/30/2018	MW-14I	351.79	8.03	343.76	
11/30/2018	MW-14D	351.51	7.49	344.02	
11/30/2018	PCGW-2	355.91	16.74	339.17	
11/30/2018	PCGW-3	353.97	--	--	Well inaccessible
11/30/2018	PW-3	353.47	25.10	328.37	
11/30/2018	SMP-0	342.29	0.85	341.44	Reading relative to stream monitoring point
11/30/2018	SMP-1A	338.47	-0.02	338.49	Reading relative to stream monitoring point
11/30/2018	SMP-1B	338.21	-0.27	338.48	Reading relative to stream monitoring point
11/30/2018	SMP-2A	334.53	--	--	SMP not found
11/30/2018	SMP-2B	334.56	--	--	SMP not found
11/30/2018	SMP-3	335.12	1.72	333.40	Reading relative to stream monitoring point

Figure A
North Penn Area 2 Superfund Site
Estimated Pounds VOCs Remaining





LEGEND

- TRIBUTARY
- EXISTING PENN COLOR MONITORING WELL
- EXISTING OFF-SITE WELL
- EXISTING BEDROCK WELL
- EXISTING OVERBURDEN WELL (REF. NOTE 2)
- EXISTING PLANT PRODUCTION WELL / RECOVERY WELL
- STREAM MONITORING POINT

NOTES:
1. M-6 WAS VERIFIED BY SURVEY TO BE REMOVED.
2. THE OVERBURDEN WELLS (PT AND S SERIES) WILL NOT BE INCLUDED IN THE REMEDIAL ACTION GROUNDWATER MONITORING PROGRAM.

120 60 0 120
SCALE IN FEET

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NO.	DATE	APPR.	REVISION	NO.	DATE	APPR.	REVISION

NORTH PENN AREA 2 SUPERFUND SITE
OPERABLE UNIT #2

HATFIELD TOWNSHIP **PENNSYLVANIA**

Environmental Resources Management
Exton, Pennsylvania 19341 (610) 524-3500

ERM

	DATE
CHECKED	
DESIGN ENGINEER	
PROJECT ENGINEER	
PROJECT MANAGER	
APPROVED	
APPROVED	

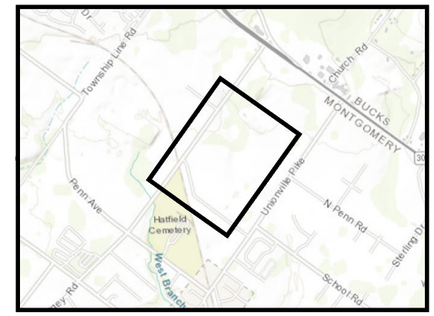
FIGURE B
WELL LOCATION MAP AND
STREAM MONITORING POINTS

DRAWN MLB	DATE 7-7-10	CLIENT APPROVAL
SCALE AS SHOWN	W.O. No. 0042525	ISSUED FOR FINAL DESIGN DATE 9-30-11

DRAWING NO.

REV. NO.

SHEET OF



Legend

- Shallow Monitoring Well (11/30/2018)
- Pontentiometric Surface Contour (Ft.)-Dashed where inferred
- Groundwater Flow Direction

NOTES:

1. Based on November 30, 2018 Event.
2. DWG. NO. 1188, "Penn Color, Inc. Formerly Ametek, Inc." 4/17/2000, James M. Stewart, Inc. Land Surveyors Philadelphia, Pennsylvania

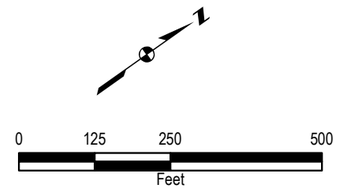


FIGURE 1
Shallow Potentiometric Contour Map
November 30, 2018
North Penn Area 2 Superfund Site
Hatfield Township, Pennsylvania

ERM

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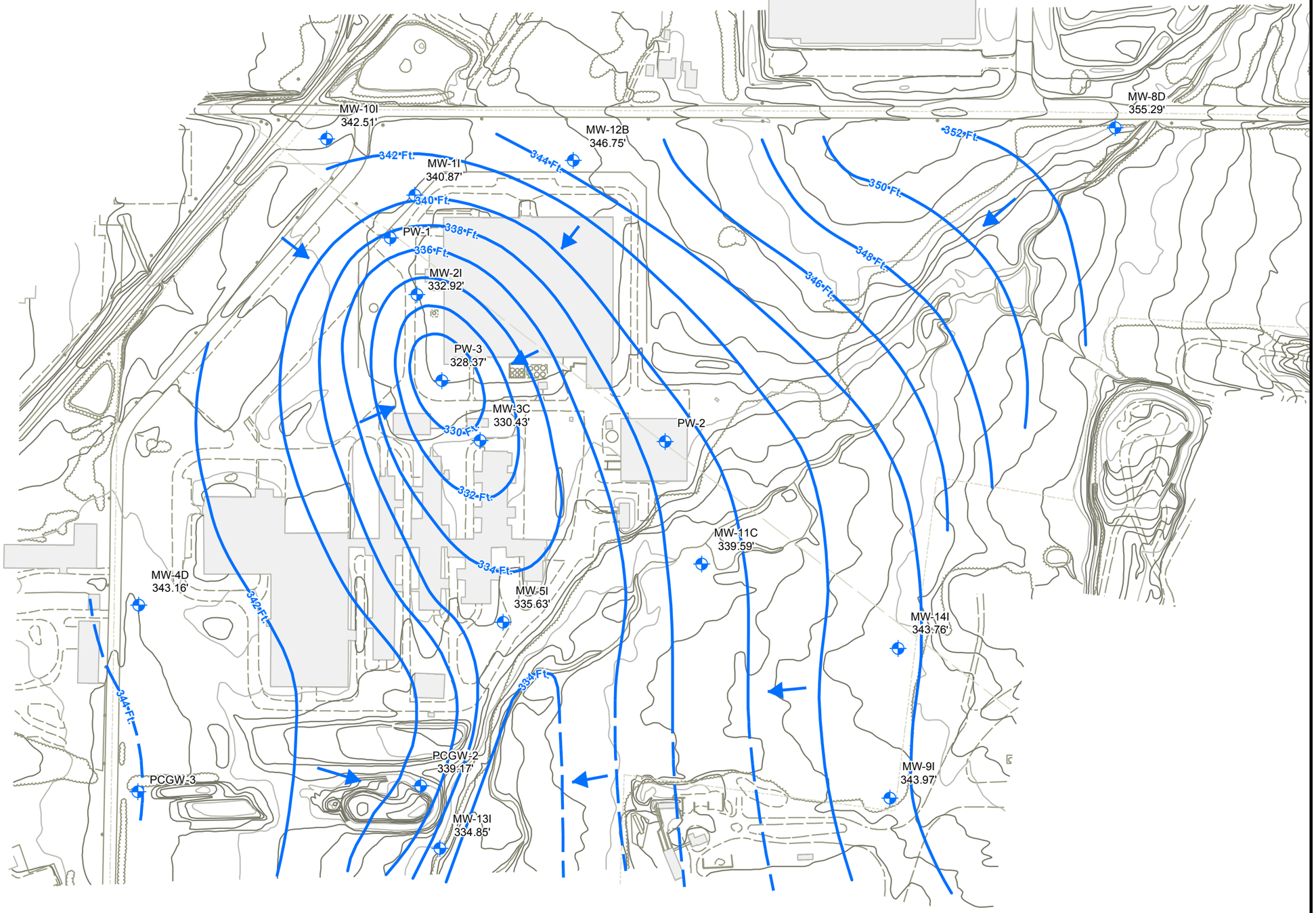

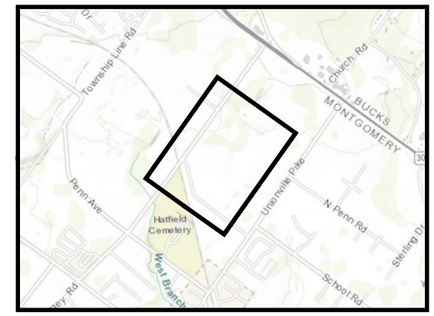

Legend

- Intermediate Monitoring Well (11/30/2018)
- Pontentiometric Surface Contour (Ft.)-Dashed where inferred
- Groundwater Flow Direction

NOTES:

1. Based on November 2018 Event.
2. DWG. NO. 1188, "Penn Color, Inc. Formerly Ametek, Inc." 4/17/2000, James M. Stewart, Inc. Land Surveyors Philadelphia, Pennsylvania

N

0 125 250 500

Feet

FIGURE 2

Intermediate Potentiometric Contour Map

November 30, 2018

North Penn Area 2 Superfund Site

Hatfield Township, Pennsylvania

December 2018

ERM

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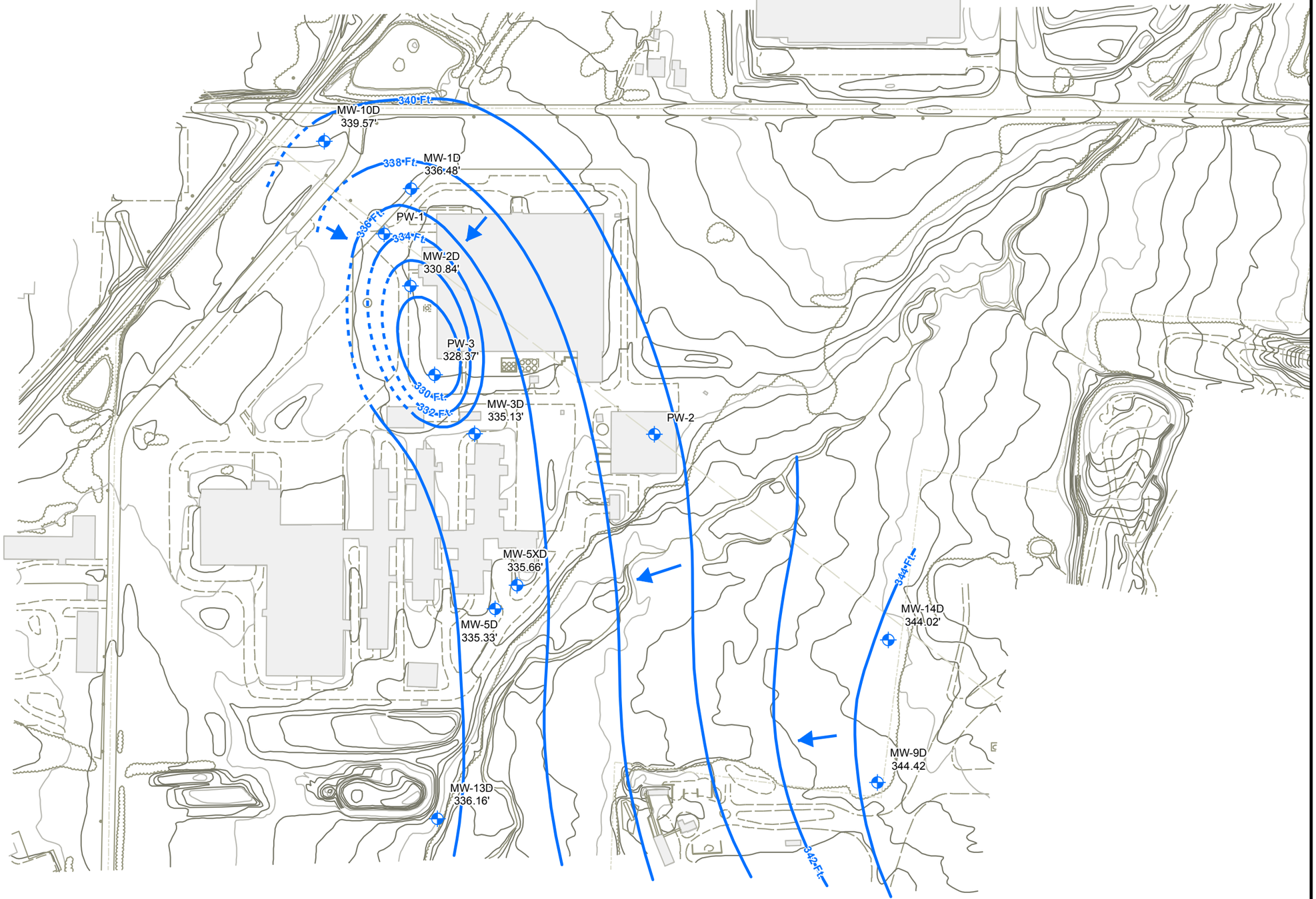

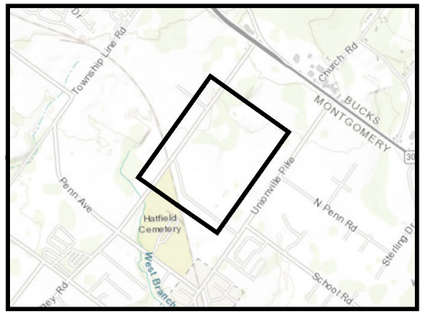

Legend

- Deep Monitoring Well (11/30/2018)
- Pontentiometric Surface Contour (Ft.)-Dashed where inferred
- Groundwater Flow Direction

NOTES:

1. Based on November 2018 Event.
2. DWG. NO. 1188, "Penn Color, Inc. Formerly Ametek, Inc." 4/17/2000, James M. Stewart, Inc. Land Surveyors Philadelphia, Pennsylvania

0 125 250 500
Feet

FIGURE 3
Deep Potentiometric Contour Map
November 30, 2018
North Penn Area 2 Superfund Site
Hatfield Township, Pennsylvania
December 2018

ERM

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